

What is claimed is:

- 1           1.     A medical procedure for connecting a blood-conveying conduit to a  
2 blood vessel, the method comprising:  
3           endoscopically creating an opening in the blood vessel at a selected location;  
4 and  
5           endoscopically forming an anastomosis between the blood-conveying  
6 conduit and the blood vessel at the selected location.
- 1           2.     The medical procedure according to claim 1 in which the blood vessel  
2 is the aorta; and  
3           the selected location is above the iliac arterial bifurcation of the aorta.
- 1           3.     The medical procedure according to claim 2 further comprising:  
2           positioning an end of an endoscope having a lumen therethrough near the  
3 selected location; and  
4           advancing an end portion of the blood-conveying conduit through the lumen  
5 of the endoscope to the selected location.
- 1           4.     The medical procedure according to claim 3 in which the endoscope is  
2 positioned via an initial entry at a location relative to a femoral artery below the  
3 inguinal ligament.

1           5.     A medical procedure for connecting a blood-conveying conduit to the  
2 aorta via a femoral artery including an occluding formation, the method  
3 comprising:

4           introducing an end of an instrument having a lumen therethrough into the  
5 femoral artery at an initial entry location below the inguinal ligament;

6           directing the end of the instrument out of the femoral artery at a location  
7 intermediate the occluding formation and the initial entry location;

8           positioning the end of the instrument near a selected location above the  
9 femoral arterial bifurcation of the aorta;

10          advancing an end portion of the blood-conveying conduit through the lumen  
11 of the instrument to the selected location adjacent the aorta; and

12          forming an anastomosis between said blood-conveying conduit and the aorta  
13 at the selected location.

1           6.     A graft assembly, comprising:

2           a graft having an orifice; and

3           a plurality of arms extending away from said orifice of said graft.

1           7.     The graft assembly of claim 6, wherein:

2           said graft defines a fluid lumen; and

3           each of said plurality of arms extend outwardly from said fluid lumen.

1           8.     The graft assembly of claim 6, wherein each of said plurality of arms  
2 extends radially outwardly from said orifice.

1           9.     The graft assembly of claim 6, wherein said graft is a synthetic graft.

1           10.    The graft assembly of claim 6, wherein:  
2           said graft includes a flange portion; and  
3           each of said plurality of arms is positioned in contact with said flange  
4 portion.

1           11.    The graft assembly of claim 10, wherein at least a part of each of said  
2 plurality of arms is integrally positioned within said flange portion.

1           12.    The graft assembly of claim 6, wherein said plurality of arms includes  
2 at least four (4) arms.

1           13.    The graft assembly of claim 6, wherein each of said plurality of arms  
2 is configured to move from a first position in relation to said graft to a second  
3 position in relation to said graft due to spring action.

1           14.    The graft assembly of claim 13, wherein each of said plurality of arms  
2 extends radially outwardly from said orifice of said graft when each of said  
3 plurality of struts is positioned in said second position in relation to said graft.

1           15.    The graft assembly of claim 6, wherein said plurality of arms are  
2 configured to inhibit advancement of said graft in a direction away from a blood  
3 vessel when said plurality of arms are located adjacent to an internal sidewall of  
4 said blood vessel.

1           16.    The graft assembly of claim 6, wherein said plurality of arms is  
2 secured to said graft.

1           17.    A graft and delivery assembly, comprising:  
2 a delivery sheath defining an interior space;  
3 a graft positioned within said interior space of said delivery sheath; and  
4 a spring assembly positioned within said interior space of said delivery  
5 sheath, said spring assembly being in a compressed state when said spring  
6 assembly is located within said interior space of said delivery sheath.

1           18.    The assembly of claim 17, wherein:  
2 said spring assembly includes a plurality of spring arms secured to said  
3 graft;  
4 said graft defines a fluid lumen; and  
5 said spring assembly is configured with each of said plurality of arms  
6 extending outwardly from said fluid lumen when said spring assembly is advanced  
7 to a location outside of said delivery sheath.

1           19.    The assembly of claim 18, wherein:  
2           said spring assembly includes a plurality of spring arms secured to said  
3    graft;  
4           said graft defines an orifice; and  
5           said spring assembly is configured with each of said plurality of arms  
6    extending outwardly from said orifice when said spring assembly is advanced to a  
7    location outside of said delivery sheath.

1           20.    The assembly of claim 17, wherein said graft is a synthetic graft.

1           21.    The graft assembly of claim 17, wherein:  
2           said graft includes a flange portion; and  
3           each of said plurality of spring arms is positioned in contact with said flange  
4    portion.

1           22.    The graft assembly of claim 21, wherein each of said plurality of  
2    spring arms is integrally positioned within said flange portion.

1           23.    The graft assembly of claim 17, wherein said delivery sheath is a  
2    laparoscope.

1           24.    The graft assembly of claim 19, wherein each of said plurality of  
2   spring arms extends radially outwardly from said orifice when said spring  
3   assembly is advanced to a location outside of said delivery sheath.

1           25.    The graft assembly of claim 17, wherein said plurality of spring arms  
2   includes at least four (4) spring arms.

1           26.    The graft assembly of claim 17, wherein each of said plurality of  
2   spring arms is configured to move from a first position in relation to said graft to a  
3   second position in relation to said graft due to spring action.

1           27.    The graft assembly of claim 17, wherein each of said plurality of  
2   spring arms is configured to move from a first position in relation to said graft to  
3   second position in relation to said graft in response to said spring assembly being  
4   advanced out of said delivery sheath.

1           28.    The graft assembly of claim 27, wherein each of said plurality of  
2   spring arms extends radially outwardly from an orifice of said graft when each of  
3   said plurality of spring arms is positioned in said second position in relation to said  
4   graft.

1           29.    A graft assembly, comprising:  
2   a blood flow conduit defining an orifice; and

3 a plurality of struts each extending outwardly from said orifice.

1 30. The assembly of claim 29, wherein said blood flow conduit is a  
2 synthetic graft.

1 31. The graft assembly of claim , wherein:  
2 said graft includes a flange portion; and  
3 each of said plurality of struts is positioned in contact with said flange  
4 portion.

1 32. The graft assembly of claim 31, wherein each of said plurality of  
2 struts is integrally positioned within said flange portion.

1 33. The graft assembly of claim 29, wherein each of said plurality of  
2 struts extends radially outwardly from said orifice.

1 34. The graft assembly of claim 29, wherein said plurality of struts  
2 includes at least four (4) struts.

1 35. The graft assembly of claim 29, wherein each of said plurality of  
2 struts is configured to move from a first position in relation to said blood flow  
3 conduit to a second position in relation to said blood flow conduit due to spring  
4 action.

1           36.    The graft assembly of claim 29, wherein each of said plurality of  
2   struts is configured to move from a first position in relation to said blood flow  
3   conduit to a second position in relation to said blood flow conduit in response to  
4   said plurality of struts being advanced out of a delivery device.

1           37.    The graft assembly of claim 35, wherein each of said plurality of  
2   struts extends radially outwardly from said orifice of said graft when each of said  
3   plurality of struts is positioned in said second position in relation to said graft.

1           38.    The graft assembly of claim 29, wherein said plurality of struts are  
2   configured to inhibit advancement of said blood flow conduit in a direction away  
3   from a blood vessel when said plurality of struts is located adjacent to an internal  
4   sidewall of said blood vessel.

1           39.    A medical assembly, comprising:  
2           a delivery device having a passageway extending therethrough; and  
3           a graft assembly including (i) a graft positioned within said passageway of  
4   said delivery device, and (ii) a plurality of struts secured to said graft.

1           40.    The medical assembly of claim 39, wherein:  
2           each of said plurality of struts includes (i) an inner end located adjacent to an  
3   orifice of said graft, and (ii) an outer end which is spaced apart from said orifice of  
4   said graft.



1           41.    The assembly of claim 39, wherein said graft is a synthetic graft.

1           42.    The graft assembly of claim, wherein said delivery device is a  
2    laparoscope.

1           43.    The graft assembly of claim 39, wherein:  
2           said graft includes a flange portion; and  
3           each of said plurality of struts is positioned in contact with said flange  
4    portion.

1           44.    The graft assembly of claim 43, wherein each of said plurality of  
2    struts is integrally positioned within said flange portion.

1           45.    The graft assembly of claim 39, wherein said plurality of struts  
2    includes at least four (4) struts.

1           46.    The graft assembly of claim 39, wherein each of said plurality of  
2    struts is configured to move from a first position in relation to said graft to a  
3    second position in relation to said graft due to spring action.

1           47.    The graft assembly of claim 46, wherein each of said plurality of  
2    struts extends radially outwardly from an orifice of said graft when each of said  
3    plurality of struts is positioned in said second position in relation to said graft.

1        48.    The graft assembly of claim 39, wherein each of said plurality of  
2        struts is configured to move from a first position in relation to said graft to a  
3        second position in relation to said graft due to spring action when said plurality of  
4        struts is removed from said passageway of said delivery device.

1        49.    The graft assembly of claim 39, wherein said plurality of struts is  
2        configured to inhibit advancement of said graft in a direction away from a blood  
3        vessel due to physical interaction between said plurality of struts and said blood  
4        vessel when said plurality of arms is located adjacent to an internal sidewall of said  
5        blood vessel.

1        50.    A graft assembly, comprising:  
2        a graft having a fluid lumen; and  
3        a plurality of braces extending outwardly from said graft.

1        51.    The graft assembly of claim 50, wherein:  
2        said graft includes an orifice; and  
3        each of said plurality of braces extends outwardly from said orifice.

1        52.    The graft assembly of claim 51, wherein each of said plurality of  
2        braces extends radially outwardly from said orifice.

1        53.    The graft assembly of claim 50, wherein said graft is a synthetic graft.

1           54.    The graft assembly of claim 50, wherein:  
2           said graft includes a flange portion; and  
3           each of said plurality of braces is positioned in contact with said flange  
4           portion.

1           55.    The graft assembly of claim 54; wherein at least a part of each of said  
2           plurality of braces is integrally positioned within said flange portion.

1           56.    The graft assembly of claim 50, wherein said plurality of braces  
2           includes at least four (4) braces.

1           57.    The graft assembly of claim 50, wherein each of said plurality of  
2           braces is maintained resiliently outwardly extending in a direction transverse to  
3           said fluid lumen.

1           58.    The graft assembly of claim 50, wherein each of said plurality of  
2           braces is configured to move from a first position in relation to said graft to a  
3           second position in relation to said graft due to spring action.

1           59.    The graft assembly of claim 58, wherein each of said plurality of  
2           braces extends radially outwardly from an orifice of said graft when each of said  
3           plurality of braces is positioned in said second position in relation to said graft.

1           60.    The graft assembly of claim 50, wherein said plurality of braces is  
2   configured to inhibit advancement of said graft away from a blood vessel when  
3   said plurality of braces are located adjacent to an internal sidewall of said blood  
4   vessel.

1           61.    A graft assembly which is configured to be positioned in relation to an  
2   arteriotomy defined in a blood vessel, comprising:

3           a graft having an orifice which is configured to align with said arteriotomy  
4   so that blood exiting out of said arteriotomy will enter said graft through said  
5   orifice; and

6           a plurality of arms extending away from said orifice of said graft, each of  
7   said plurality of arms being configured to lie adjacent a sidewall of said blood  
8   vessel when said orifice of said graft is aligned with said arteriotomy.

1           62.    The graft assembly of claim 61, wherein each of said plurality of arms  
2   extends radially outwardly from said orifice of said graft.

1           63.    The graft assembly of claim 61, wherein said graft is a synthetic graft.

1           64.    The graft assembly of claim 61, wherein:

2           said graft includes a flange portion; and

3           each of said plurality of arms is positioned in contact with said flange  
4   portion.

1           65.    The graft assembly of claim 64, wherein each of said plurality of arms  
2 is integrally positioned within said flange portion.

1           66.    The graft assembly of claim 61, wherein said plurality of arms  
2 includes at least four (4) arms.

1           67.    The graft assembly of claim 61, wherein:  
2           said graft has a fluid lumen; and  
3           each of said plurality of arms extends in a direction transverse to said fluid  
4 lumen.

1           68.    The graft assembly of claim 61, wherein each of said plurality of arms  
2 is configured to move from a first position in relation to said graft to a second  
3 position in relation to said graft due to spring action.

1           69.    The graft assembly of claim 61, wherein each of said plurality of arms  
2 is configured to move from a first position in relation to said graft to a second  
3 position in relation to said graft in response to said plurality of arms being  
4 advanced out of an internal space of a delivery device.

1           70.    The graft assembly of claim 68, wherein each of said plurality of arms  
2 extends radially outwardly from an orifice of said graft when each of said plurality  
3 of arms is positioned in said second position in relation to said graft.

1           71.    The graft assembly of claim 61, wherein said plurality of arms are  
2   configured to inhibit advancement of said graft in a direction away from a blood  
3   vessel due to physical interaction between said plurality of arms and said blood  
4   vessel when said plurality of arms are located adjacent to an internal sidewall of  
5   said blood vessel.

1           72.    A graft and delivery assembly, comprising:  
2           a graft having an orifice which is configured to align with an arteriotomy  
3   defined in a blood vessel so that blood exiting out of said arteriotomy will enter  
4   said graft through said orifice;  
5           a plurality of support members extending away from said orifice of said  
6   graft, each of said plurality of support members being configured to lie adjacent a  
7   sidewall of said blood vessel when said orifice is aligned with said arteriotomy;  
8   and  
9           a delivery device configured to receive said graft within an interior space  
10   thereof.

1           73.    The graft assembly of claim 72, wherein each of said plurality of  
2   support members is configured to move from a first position in relation to said  
3   graft to a second position in relation to said graft in response to said plurality of  
4   support members being advanced out of said delivery device.

1           74.    The graft assembly of claim 73, wherein each of said plurality of  
2   support members extends radially outwardly from said orifice of said graft when  
3   each of said plurality of support members is positioned in said second position in  
4   relation to said graft.

1           75.    The graft assembly of claim 72, wherein said graft is a synthetic graft.

1           76.    The graft assembly of claim 72, wherein:  
2           said graft includes a flange portion, and  
3           each of said plurality of support members is positioned in contact with said  
4   flange portion.

1           77.    The graft assembly of claim 76, wherein each of said plurality of  
2   support members is integrally positioned within said flange portion.

1           78.    The graft assembly of claim 72, wherein said plurality of support  
2   members includes at least four (4) support members.

1           79.    The graft assembly of claim 72, wherein said delivery device is a  
2   laparoscope.

1           80.    The graft assembly of claim 72, wherein each of said plurality of  
2   support members is configured to move from a first position in relation to said  
3   graft to a second position in relation to said graft due to spring action.

1           81.    The graft assembly of claim 80, wherein each of said plurality of  
2   support members extends radially outwardly from an orifice of said graft when  
3   each of said plurality of support members is positioned in said second position in  
4   relation to said graft.

1           82.    The graft assembly of claim 72, wherein each of said plurality of  
2   support members is configured to move from a first position in relation to said  
3   graft to a second position in relation to said graft due to spring action when said  
4   plurality of support members are removed from said internal space of said delivery  
5   device.

1           83.    The graft assembly of claim 72, wherein said delivery device is  
2   further configured to receive said plurality of support members within said interior  
3   space of said delivery device.

1           84.    The graft assembly of claim 72, wherein said plurality of support  
2   members is configured to inhibit advancement of said graft away from said blood  
3   vessel due to physical interaction between said plurality of support members and  
4   said blood vessel when said plurality of support members is located adjacent to an  
5   internal sidewall of said blood vessel.

1           85.    A method of locating a graft in relation to an anastomosis site,  
2   comprising the steps of:



3        locating the graft within a passageway of a delivery device;  
4        advancing the delivery device toward the anastomosis site while the graft is  
5        located within the passageway of the delivery device; and  
6        removing the graft from the passageway of the delivery device after the  
7        advancing step.

1        86.    The method of claim 85, wherein the removing step includes the steps  
2        of:

3        maintaining an end of the graft at the anastomosis site; and  
4        moving the delivery device in direction away from the anastomosis site  
5        during the maintaining step.

1        87.    The method of claim 85, wherein an end of the graft is maintained at  
2        an anastomosis site during the removing step.

1        88.    The method of claim 85, wherein the delivery device is moved in a  
2        direction away from the anastomosis site during the removing step.

1        89.    The method of claim 85, wherein the delivery device possesses a  
2        tubular shape.

1        90.    The method of claim 85, wherein:  
2        a first end of the graft is located at a first position in the passageway after the

3 locating step:

4 a second end of the graft is located at a second position in the passageway

5 after the locating step; and

6 a body of the graft is interposed between the first position and the second

7 position in the passageway after the locating step.

1 91. The method of claim 85, wherein the delivery device holds the graft in

2 a linear configuration.

1 92. The method of claim 85, wherein the graft is positioned completely

2 within the passageway of the delivery device during the locating step.

1 93. The method of claim wherein 85, the advancing step includes the step

2 of advancing the delivery device toward an arteriotomy defined in a wall of an

3 aorta.

1 94. The method of claim 93, wherein the removing step includes the step

2 of moving the delivery device away from the arteriotomy defined in the wall of the

3 aorta.

1 95. The method of claim 85, wherein:

2 the delivery device includes a distal opening and a proximal opening; and

3 the passageway extends between the distal opening and the proximal

4 opening.

1 96. The method of claim 85, wherein the delivery device is a laparoscope.

1 97. The method of claim 85, wherein:

2 the locating step includes the step of locating the graft within the  
3 passageway with an end of the graft located adjacent to a distal end of the delivery  
4 device; and

5 the advancing step includes the step of advancing the delivery device toward  
6 the anastomosis site while the end of the graft is located adjacent to the distal end  
7 of the delivery device.

1 98. The method of claim 85, wherein:

2 the graft includes an aorta attachment end and another vessel attachment  
3 end; and

4 during the removing step, the aorta attachment end is removed from the  
5 passageway of the delivery device prior to removal of the other vessel attachment  
6 end from the passageway.

1 99. The method of claim 98 wherein:

2 the delivery device includes a distal opening; and

3 both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the delivery device during the removing

5 step.

1 100. The method of claim 85, wherein said graft is a synthetic graft.

1 101. A method of positioning a blood flow conduit in relation to an  
2 arteriotomy, comprising the steps of:

3 placing the blood flow conduit within an interior space of a delivery device;

4 and

5 advancing a distal end of the delivery device to a site adjacent to the  
6 arteriotomy while the blood flow conduit is located within the interior space of the  
7 delivery device.

1 102. The method of claim 101, wherein:

2 the delivery device includes a proximal opening and a distal opening;

3 the interior space is defined by a passageway interposed between the

4 proximal opening and the distal opening.

1 103. The method of claim 101, further comprising the steps of:

2 maintaining an end of the blood flow conduit at the site; and

3 moving the delivery device away from the site during the maintaining step.

1 104. The method of claim 101, wherein the delivery device possesses a

2 tubular shape.

1           105. The method of claim 101, wherein:  
2           a first end of the blood flow conduit is located at a first position in the  
3 interior space after the placing step;  
4           a second end of the blood flow conduit is located at a second position in the  
5 interior space after the placing step; and  
6           a body of the blood flow conduit is interposed between the first position and  
7 the second position in the interior space after the placing step.

1           106. The method of claim 101, wherein the delivery device holds the blood  
2 flow conduit in the interior space so that the blood flow conduit assumes a linear  
3 configuration.

1           107. The method of claim 101, wherein the entire blood flow conduit is  
2 positioned within the interior space of the delivery device during the placing step.

1           108. The method of claim 101, wherein the arteriotomy is defined in a wall  
2 of an aorta.

1           109. The method of claim 101, wherein the delivery device is a  
2 laparoscope having a channel which defines said interior space.

1           110. The method of claim 101, wherein:  
2 the placing step includes locating the blood flow conduit within the interior

3 space with an end of the blood flow conduit located adjacent to a distal end of the  
4 delivery device; and

5 the advancing step includes the step of advancing the delivery device toward  
6 the site while the end of the blood flow conduit is located adjacent to the distal end  
7 of the delivery device.

1 111. The method of claim 101, further comprising the step of removing the  
2 blood flow conduit from the delivery device after the advancing step, wherein:

3 the blood flow conduit includes an aorta attachment end and another vessel  
4 attachment end; and

5 during the removing step, the aorta attachment end is removed from the  
6 delivery device prior to removal of said another vessel attachment end from the  
7 delivery device.

1 112. The method of claim 111, wherein:

2 the delivery device includes a distal opening; and

3 both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the delivery device during the removing  
5 step.

1 113. The method of claim 101, wherein said blood flow conduit is a  
2 synthetic graft.

1           114. A method of locating a graft in relation to an opening in a blood  
2 vessel during a bypass grafting procedure, comprising the steps of:  
3           locating the graft within a passageway of a delivery sheath; and  
4           advancing the delivery sheath toward the opening while the graft is located  
5 within the passageway of the delivery sheath; and  
6           removing the graft from the passageway of the delivery sheath after the  
7 advancing step.

1           115. The method of claim 114, wherein the removing step includes the  
2 steps of:  
3           maintaining an end of the graft at a site near the opening in the blood vessel;  
4 and  
5           moving the delivery sheath in direction away from the site during the  
6 maintaining step.

1           116. The method of claim 114, wherein an end of the graft is maintained at  
2 the site during the removing step.

1           117. The method of claim 114, wherein the delivery sheath is moved in a  
2 direction away from the site during the removing step.

1           118. The method of claim 114, wherein the delivery sheath possesses a  
2 tubular shape.

1        119. The method of claim 114, wherein:  
2        a first end of the graft is located at a first position in the passageway after the  
3        locating step;  
4        a second end of the graft is located at a second position in the passageway  
5        after the locating step; and  
6        a body of the graft is interposed between the first position and the second  
7        position in the passageway after the locating step.

1        120. The method of claim 114, wherein the delivery sheath holds the graft  
2        in a linear configuration.

1        121. The method of claim 120, wherein the delivery sheath holds the graft  
2        in a rolled configuration.

1        122. The method of claim 114, wherein the graft is positioned completely  
2        within the passageway of the delivery sheath during the locating step.

1        123. The method of claim 114, wherein:  
2        the blood vessel is an aorta;  
3        the opening is an arteriotomy defined in the aorta; and  
4        the advancing step includes the step of advancing the delivery sheath toward  
5        the arteriotomy.



1           124. The method of claim 123, wherein the removing step includes the step  
2 of moving the delivery sheath away from the opening defined in the blood vessel.

1           125. The method of claim 114, wherein:  
2 the delivery sheath includes a distal opening and a proximal opening; and  
3 the passageway extends between the distal opening and the proximal  
4 opening.

1           126. The method of claim 114, wherein the delivery sheath is a  
2 laparoscope.

1           127. The method of claim 114, wherein:  
2 the locating step includes the step of locating the graft within the  
3 passageway so that an end of the graft is located adjacent to a distal end of the  
4 delivery sheath; and  
5 the advancing step includes the step of advancing the delivery sheath toward  
6 the opening while the end of the graft is located adjacent to the distal end of the  
7 delivery sheath.

1           128. The method of claim 114, wherein:  
2 the graft includes an aorta attachment end and another vessel attachment  
3 end; and  
4 during the removing step, the aorta attachment end is removed from the

5 passageway of the delivery sheath prior to removal of said another vessel  
6 attachment end from the passageway.

1 129. The method of claim 128, wherein:  
2 the delivery sheath includes a distal opening; and  
3 both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the delivery sheath during the removing  
5 step.

1 130. The method of claim 114, wherein said graft is a synthetic graft.

1 131. A method of locating a graft in relation to an arteriotomy defined in  
2 an aorta, comprising the steps of:  
3 locating the graft in an interior space of a delivery sheath;  
4 advancing the delivery sheath toward the arteriotomy while the graft is  
5 located within the interior space of the delivery sheath; and  
6 removing the graft from the interior space of the delivery sheath after the  
7 advancing step.

1 132. The method of claim 131, wherein the removing step includes:  
2 maintaining an end of the graft at an anastomosis site; and  
3 moving the delivery sheath away from the anastomosis site during the  
4 maintaining step.

1           133. The method of claim 131, wherein:  
2           a first end of the graft is located at a first position in the interior space after  
3 the locating step;  
4           a second end of the graft is located at a second position in the interior space  
5 after the locating step; and  
6           a body of the graft is interposed between the first position and the second  
7 position in the interior space after the locating step.

1           134. The method of claim 131, wherein the delivery sheath holds the graft  
2 in a linear configuration.

1           135. The method of claim 131, wherein the delivery sheath holds the graft  
2 in a rolled configuration.

1           136. The method of claim 131, wherein:  
2 the delivery sheath includes a distal opening and a proximal opening; and  
3 the interior space extends between the distal opening and the proximal  
4 opening.

1           137. The method of claim 131, wherein the delivery sheath is a  
2 laparoscope.

1           138. The method of claim 131, wherein:  
2 the graft includes an aorta attachment end and another vessel attachment  
3 end; and

4 during the removing step, the aorta attachment end is removed from the  
5 interior space of the delivery sheath prior to removal of said another vessel  
6 attachment end from the interior space.

1 139. The method of claim, wherein:

2 the delivery sheath includes a distal opening; and

3 both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the delivery sheath during the removing  
5 step.

1 140. The method of claim 131, wherein said graft is a synthetic graft.

1 141. A method of delivering a graft to an anastomosis site, comprising the  
2 steps of:

3 locating the graft within a passageway of a delivery device;

4 advancing the delivery device toward the anastomosis site while the graft is  
5 located within the passageway of the delivery device; and

6 removing the graft from the passageway of the delivery device when an end  
7 of the graft is located at the anastomosis site.

1 142. The method of claim 141, wherein the removing step includes the  
2 steps of:

3 maintaining the end of the graft at the anastomosis site; and

4 moving the delivery device in a direction away from the anastomosis site

5 during the maintaining step.

1 143. The method of claim 141, wherein the end of the graft is maintained at  
2 an anastomosis site during the removing step.

1 144. The method of claim 141, wherein the delivery device is moved in a  
2 direction away from the anastomosis site during the removing step.

1 145. The method of claim 141, wherein the delivery device possesses a  
2 tubular shape.

1 146. The method of claim 141, wherein:  
2 a first end of the graft is located at a first position in the passageway after the  
3 locating step;

4 a second end of the graft is located at a second position in the passageway  
5 after the locating step; and

6 a body of the graft is interposed between the first position and the second  
7 position in the passageway after the locating step.

1 147. The method of claim 141, wherein the delivery device holds the graft  
2 in a linear configuration.

1 148. The method of claim 141, wherein the graft is positioned completely  
2 within the passageway of the delivery device during the locating step.

1 149. The method of claim 141, wherein the advancing step includes  
2 advancing the delivery device toward an arteriotomy defined in a wall of an aorta.

1           150. The method of claim 149, wherein the removing step includes moving  
2 the delivery device away from the arteriotomy defined in the wall of the aorta.

1           151. The method of claim 141, wherein:  
2 the delivery device includes a distal opening and a proximal opening; and  
3 the passageway extends between the distal opening and the proximal  
4 opening.

1           152. The method of claim 141, wherein the delivery device is a  
2 laparoscope.

1           153. The method of claim 141, wherein:  
2 the locating step includes the step of locating the graft within the  
3 passageway with an end of the graft located adjacent to a distal end of the delivery  
4 device; and

5 the advancing step includes advancing the delivery device toward the  
6 anastomosis site while the end of the graft is located adjacent to the distal end of the  
7 delivery device.

1           154. The method of claim 141, wherein:  
2 the graft includes an aorta attachment end and another vessel attachment  
3 end; and

4 during the removing step, the aorta attachment end is removed from the  
5 passageway of the delivery device prior to removal of said another vessel

6 attachment end from the passageway.

1 155. The method of claim 154, wherein:

2 the delivery device includes a distal opening; and

3 both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the delivery device during the removing  
5 step.

1 156. The method of claim 141, wherein said graft is a synthetic graft.

1 157. A method of locating a blood flow conduit in relation to an opening  
2 defined in a blood vessel, comprising:

3 locating the blood flow conduit within an interior space of a medical  
4 instrument;

5 advancing the medical instrument toward the opening defined in the blood  
6 vessel while the blood flow conduit is located within the interior space; and

7 removing the blood flow conduit from the interior space after the advancing  
8 step.

1 158. The method of claim 157, wherein the removing step includes the  
2 steps of:

3 maintaining an end of the blood flow conduit at a site adjacent to the  
4 opening defined in the blood vessel; and

5 moving the medical instrument away from the site during the maintaining

6 step.

1 159. The method of claim 157, wherein an end of the blood flow conduit is  
2 maintained at the site during the removing step.

1 160. The method of claim 157, wherein the delivery device is moved away  
2 from the site during the removing step.

1 161. The method of claim 157 wherein the medical instrument possesses a  
2 tubular shape.

1 162. The method of claim 157, wherein:  
2 a first end of the blood flow conduit is located at a first position in the  
3 interior space after the locating step;  
4 a second end of the blood flow conduit is located at a second position in the  
5 interior space after the locating step; and  
6 a body of the blood flow conduit is interposed between the first position and  
7 the second position in the interior space after the locating step.

1 163. The method of claim 157, wherein the medical instrument holds the  
2 blood flow conduit in a linear configuration.

1 164. The method of claim 157, wherein the blood flow conduit is  
2 positioned completely within the interior space of the medical instrument during  
3 the locating step.

1 165. The method of claim 157, wherein:



2 the blood vessel is an aorta;  
3 the opening is an arteriotomy defined in the wall of the aorta; and  
4 the advancing step includes the step of advancing the medical instrument  
5 toward an arteriotomy defined in a wall of an aorta.

1 166. The method of claim 165, wherein the removing step includes the step  
2 of moving the medical instrument away from the arteriotomy defined in the wall of  
3 the aorta.

1 167. The method of claim 157, wherein:  
2 the medical instrument includes a distal opening and a proximal opening;  
3 and  
4 the interior space extends between the distal opening and the proximal  
5 opening.

1 168. The method of claim 157, wherein the medical instrument is a  
2 laparoscope.

1 169. The method of claim 157, wherein:  
2 the locating step includes locating the blood flow conduit within the interior  
3 space with an end of the blood flow conduit located adjacent to a distal end of the  
4 medial instrument; and  
5 the advancing step includes advancing the medical instrument toward the  
6 site while the end of the blood flow conduit is located adjacent to the distal end of

7 the medical instrument.

1 170. The method of claim 157, wherein:

2 the blood flow conduit includes an aorta attachment end and another vessel  
3 attachment end; and

4 during the removing step, the aorta attachment end is removed from the  
5 interior space of the medical instrument prior to removal of said another vessel  
6 attachment end from the interior space.

1 171. The method of claim 170, wherein:

2 the medical instrument includes a distal opening; and

3 both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the medical instrument during the removing  
5 step.

1 172. The method of claim 157, wherein said blood flow conduit is a  
2 synthetic blood flow conduit.

1 173. A method of delivering a graft to an anastomosis site, comprising:

2 advancing a delivery device toward the anastomosis site while the graft is  
3 located in an interior space of the delivery device; and

4 removing the graft from the interior space of the delivery device after the  
5 advancing step by (i) maintaining an end of the graft at the anastomosis site, and  
6 (ii) moving the delivery device away from the anastomosis site during the

7 maintaining step.

1 174. The method of claim 173, wherein the delivery device possesses a  
2 tubular shape.

1 175. The method of claim 173, wherein:

2 a first end of the graft is located at a first position in the interior space after  
3 the locating step;

4 a second end of the graft is located at a second position in the interior space  
5 after the locating step; and

6 a body of the graft is interposed between the first position and the second  
7 position in the interior space after the locating step.

1 176. The method of claim 173, wherein the delivery device holds the graft  
2 in a linear configuration.

1 177. The method of claim 173, wherein the graft is positioned completely  
2 within the interior space of the delivery device during the locating step.

1 178. The method of claim 173, wherein the advancing step includes the  
2 step of advancing the delivery device toward an arteriotomy defined in a wall of an  
3 aorta.

1 179. The method of claim 178, wherein the removing step includes the step  
2 of moving the delivery device away from the arteriotomy defined in a wall of an  
3 aorta.

1           180. The method of claim 173, wherein:  
2           the delivery device includes a distal opening and a proximal opening; and  
3           the interior space extends between the distal opening and the proximal  
4 opening.

1           181. The method of claim 173, wherein the delivery device is a  
2 laparoscope.

1           182. The method of claim 173, wherein the advancing step includes  
2 advancing the delivery device toward the anastomosis site while an end of the graft  
3 is located adjacent to the distal end of the delivery device.

1           183. The method of claim 173, wherein:  
2           the graft includes an aorta attachment end and another vessel attachment  
3 end; and  
4           during the removing step, the aorta attachment end is removed from the  
5 interior space of the delivery device prior to removal of said another vessel  
6 attachment end from the interior space.

1           184. The method of claim 183, wherein:  
2           the delivery device includes a distal opening; and  
3           both the aorta attachment end and said another vessel attachment end are  
4 advanced through the distal opening of the delivery device during the removing  
5 step.

1           185. The method of claim 173, wherein said graft is a synthetic graft.

1           186. A method of locating a graft in relation to an anastomosis site,

2 comprising the steps of:

3           positioning the graft within a delivery device with its full length contained

4 therein;

5           advancing the delivery device toward the anastomosis site while the full

6 length of the graft is contain therein; and

7           removing the graft from the delivery device after the advancing step.

1           187. The method of claim 186, wherein the removing step includes:

2           maintaining an end of the graft at the anastomosis site; and

3           moving the delivery device in a direction away from the anastomosis site

4 during the maintaining step.

1           188. The method of claim 186, wherein an end of the graft is maintained at

2 an anastomosis site during the removing step.

1           189. The method of claim 186, wherein the delivery device is moved in a

2 direction away from the anastomosis site during the removing step.

1           190. The method of claim 186, wherein the delivery device possesses a

2 tubular shape.

1           191. The method of claim 186, wherein:

2           a first end of the graft is located at a first position in the passageway after the

3 locating step;

4 a second end of the graft is located at a second position in the passageway

5 after the locating step; and

6 a body of the graft is interposed between the first position and the second

7 position in the passageway after the locating step.

1 192. The method of claim 186, wherein the delivery device holds the graft  
2 in a linear configuration.

1 193. The method of claim 192, wherein the delivery device holds the graft  
2 in a rolled configuration.

1 194. The method of claim 186, wherein the advancing step includes  
2 advancing the delivery device toward an arteriotomy defined in a wall of an aorta.

1 195. The method of claim 186, wherein the removing step includes moving  
2 the delivery device away from the arteriotomy defined in the wall of an aorta.

1 196. The method of claim 186, wherein:  
2 the delivery device includes a distal opening and a proximal opening; and  
3 a passageway extends between the distal opening and the proximal opening.

1 197. The method of claim 186, wherein the delivery device is a  
2 laparoscope.

1 198. The method of claim 186, wherein:  
2 the locating step includes the step of locating the graft within the

3 passageway with an end of the graft located adjacent to a distal end of the delivery  
4 device; and

5 the advancing step includes advancing the delivery device toward the  
6 anastomosis site while the end of the graft is located adjacent to the distal end of  
7 the delivery device.

1 199. The method of claim 186, wherein:

2 the graft includes an aorta attachment end and another vessel attachment  
3 end; and

4 during the removing step, the aorta attachment end is removed from the  
5 passageway of the delivery device prior to removal of said another vessel  
6 attachment end from the passageway.

1 200. The method of claim 199, wherein:

2 the delivery device includes a distal opening; and

3 both the aorta attachment and said another vessel attachment end are  
4 advanced through the distal opening of the delivery device during the removing  
5 step.

1 201. The method of claim 186, wherein said graft is a synthetic graft.

1 202. A graft and delivery system, comprising:

2 a delivery device having a passageway defined therein; and

3 a graft located within the passageway of the delivery device.

1           203. The system of claim 202, wherein the delivery device is configured to  
2 possess a tubular shape.

1           204. The system of claim 202, wherein:  
2 the graft has a first end, a second end, and a body;  
3 the first end of the graft is located at a first position in the passageway;  
4 the second end of the graft is located at a second position in the passageway;  
5 and  
6 the body of the graft is interposed between the first position and the second  
7 position in the passageway.

1           205. The system of claim 202, wherein the delivery device is configured to  
2 hold the graft in a linear configuration when the graft is located within the  
3 passageway.

1           206. The system of claim 202, wherein the graft is positioned completely  
2 within the passageway of the delivery device.

1           207. The system of claim 202, wherein:  
2 the delivery device includes a distal opening and a proximal opening; and  
3 the passageway extends between the distal opening and the proximal opening.

1           208. The system of claim 202, wherein the delivery device is a  
2 laparoscope.



1           209. The system of claim 202, wherein an end of the graft is located  
2 adjacent to a distal end of the delivery device when the graft is located within the  
3 passageway.

1           210. The system of claim 202, wherein the graft is a synthetic graft.

1           211. The system of claim 202, further comprising an elongate member  
2 configured to be received within the passageway when the graft is located within  
3 the passageway.

1           212. The system of claim 211, wherein said elongate member has a length  
2 sufficient to span the length of the delivery device.

1           213. A blood flow conduit and delivery system, comprising:  
2 a delivery device having an interior space defined therein; and  
3 a blood flow conduit located within the interior space of the delivery device.

1           214. The system of claim 213, wherein the delivery device is configured in  
2 a tubular shape.

1           215. The system of claim 213, wherein:  
2 the blood conduit has a first end, a second end, and a body;  
3 the first end of the blood flow conduit is located at a first position in the  
4 interior space;  
5 the second end of the blood flow conduit is located at a second position in  
6 the interior space; and

7           the body of the blood flow conduit is interposed between the first position  
8   and the second position in the interior space.

1           216. The system of claim 213, wherein the delivery device is configured to  
2   hold the blood flow conduit in a linear configuration when the blood flow conduit  
3   is located within the interior space.

1           217. The system of claim 213, wherein the blood flow conduit is positioned  
2   completely within the interior space of the delivery device.

1           218. The system of claim 213, wherein:  
2           the delivery device includes a distal opening and a proximal opening; and  
3           the interior space extends between the distal opening and the proximal  
4           opening.

1           219. The system of claim 213, wherein the delivery device is a  
2   laparoscope.

1           220. The system of claim 213, wherein an end of the blood flow conduit is  
2   located adjacent to a distal end of the delivery device when the blood flow conduit  
3   is located within the interior space.

1           221. The system of claim 213, wherein the blood flow conduit is a  
2   synthetic graft.

1           222. The system of claim 213, further comprising an elongate member  
2 configured to be received within the interior space when the blood flow conduit is  
3 located within the interior space.

1           223. The system of claim 222, wherein said elongate member has a length  
2 sufficient to span the length of the interior space.

1           224. The system of claim 213, wherein:  
2 the delivery device includes a proximal opening and a distal opening; and  
3 the interior space is defined by a passageway interposed between the  
4 proximal opening and the distal opening.

1           225. The system of claim 213, wherein the delivery device is a laparoscope  
2 having a channel which defines the interior space.

1           226. A graft and delivery system, comprising:  
2 a delivery device; and  
3 a graft located within the delivery device with its full length contained  
4 therein.

1           227. The system of claim 226, wherein the delivery device is configured in  
2 a tubular shape.

1           228. The system of claim 226, wherein:  
2 the graft has a first end, a second end, and a body;  
3 the first end of the graft is located at a first position in the delivery device;

4 the second end of the graft is located at a second position in the delivery  
5 device; and

6 the body of the graft is interposed between the first position and the second  
7 position in the delivery device.

1 229. The system of claim 226, wherein the delivery device is configured to  
2 hold the graft in a linear configuration when the graft is located within the delivery  
3 device.

1 230. The system of claim 226, wherein the graft is positioned completely  
2 within the delivery device.

1 231. The system of claim 226, wherein:  
2 the delivery device includes a distal opening and a proximal opening; and  
3 a passage extends between the distal opening and the proximal opening.

1 232. The system of claim 226, wherein the delivery device is a  
2 laparoscope.

1 233. The system of claim 226, wherein an end of the graft is located  
2 adjacent to a distal end of the delivery device when the graft is located within the  
3 delivery device.

1 234. The system of claim 226, wherein the graft is a synthetic graft.

1           235. The system of claim 226, further comprising an elongate member  
2 configured to be received within the delivery device when the graft is located  
3 within the delivery device.

1           236. The system of claim 235, wherein said elongate member has a length  
2 sufficient to span the length of the delivery device.

1           237. The system of claim 226, wherein:  
2 the delivery device is a laparoscope having a channel which defines a  
3 passageway.

1           238. A graft and delivery system, comprising:  
2 a delivery sheath having a passageway defined therein; and  
3 a graft located within the passageway of the delivery sheath.

1           239. The system of claim 238, wherein the delivery sheath is configured in  
2 a tubular shape.

1           240. The system of claim 238, wherein:  
2 the graft has a first end, a second end, and a body;  
3 the first end of the graft is located at a first position in the passageway;  
4 the second end of the graft is located at a second position in the passageway;  
5 and  
6 the body of the graft is interposed between the first position and the second  
7 position in the passageway.

1           241. The system of claim 238, wherein the delivery sheath is configured to  
2 hold the graft in a linear configuration when the graft is located within the  
3 passageway.

1           242. The system of claim 238, wherein the graft is positioned completely  
2 within the passageway of the delivery sheath.

1           243. The system of claim 238, wherein:  
2 the delivery sheath includes a distal opening and a proximal opening; and  
3 the passageway extends between the distal opening and the proximal  
4 opening.

1           244. The system of claim 238, wherein the delivery sheath is a  
2 laparoscope.

1           245. The system of claim 238, wherein an end of the graft is located  
2 adjacent to a distal end of the delivery sheath when the graft is located within the  
3 passageway.

1           246. The system of claim 238, wherein the graft is a synthetic graft.

1           247. The system of claim 238, further comprising an elongate member  
2 configured to be received within the passageway when the graft is located within  
3 the passageway.

1           248. The system of claim 247, wherein said elongate member has a length  
2 sufficient to span the length of the delivery sheath.

1        249. A blood flow conduit and a delivery system, comprising:  
2        a medical instrument having an interior space, defined therein; and  
3        a blood flow conduit located within the interior space of the medical  
4 instrument.

1        250. The system of claim 249, wherein the medical instrument is  
2 configured in a tubular shape.

1        251. The system of claim 249, wherein:  
2        the blood flow conduit has a first end, a second end, and a body;  
3        the first end of the blood flow conduit is located at a first position in the  
4 interior space;  
5        the second end of the blood flow conduit is located at a second position in  
6 the interior space; and  
7        the body of the blood flow conduit is interposed between the first position  
8 and the second position in the interior space.

1        252. The system of claim 249, wherein the medical instrument is  
2 configured to hold the blood flow conduit in a linear configuration when the blood  
3 flow conduit is located within the interior space.

1        253. The system of claim 249, wherein the blood flow conduit is position  
2 completely within the interior space of the medical instrument.

1        254. The system of claim 249, wherein:

2           The medical instrument includes a distal opening and a proximal opening;  
3   and  
4           the interior space extends between the distal opening and the proximal  
5   opening.

1           255. The system of claim 249, wherein the medical instrument is a  
2   laparoscope.

1           256. The system of claim 249, wherein an end of the blood flow conduit is  
2   located adjacent to a distal end of the medical instrument when the blood flow  
3   conduit is located within the interior space.

1           257. The system of claim 249, wherein the blood flow conduit is a  
2   synthetic blood flow conduit.

1           258. The system of claim 249, further comprising an elongate member  
2   configured to be received within the interior space when the blood flow conduit is  
3   located within the interior space.

1           259. The system of claim 258, wherein said elongate member has a length  
2   sufficient to span the length of the medical instrument.

1           260. A method of delivering a graft to a working site within the body of a  
2   patient during a bypass grafting procedure on a blood vessel having an occluded  
3   segment, the method comprising:

4           advancing a medical instrument within a blood vessel of said body from a



5 location downstream of the occluded segment;

6       guiding a first portion of said medical instrument through an opening formed  
7 in said blood vessel downstream of the occluded segment to extend the first portion  
8 of said medical instrument outside a said blood vessel with a second portion of said  
9 medical instrument located within said blood vessel downstream of the occluded  
10 segment; and

11       advancing said graft through said medical instrument to said working site at  
12 which said first portion of said medical instrument is located outside of said blood  
13 vessel with said second portion of said medical instrument located within said  
14 blood vessel.

1       261. A method of delivering an implantable medical apparatus to a  
2 working site within the body of a patient during a medical procedure on the  
3 circulatory system having an occluded segment, the method comprising:

4       advancing a medical instrument within the circulatory system of said body;  
5       guiding a distal end portion of said medical instrument through an opening  
6 formed in said circulatory system to extend a first portion of said medical  
7 instrument outside of said circulatory system with a second portion of said medical  
8 instrument located within said circulatory system; and

9       advancing said implantable medical apparatus within said medical  
10 instrument toward said working site with said first portion of said medical

11 instrument located outside of said circulatory system, and with said second portion  
12 of said medical instrument within said circulatory system; and  
13 advancing said implantable medical apparatus within said medical  
14 instrument located outside of said circulatory system, and with said second portion  
15 of said medical instrument located within said circulatory system.

1 262. The method of claim 261 for performance on the circulatory system  
2 having an occluded segment, wherein advancing said medical instrument within  
3 said circulatory system of said body proceeds toward said occluded segment from  
4 a location downstream of the occluded segment.

1 263. A method of implanting an end portion of a graft on the circulatory  
2 system having an occluded segment in the body of a patient during a bypass  
3 grafting procedure, the method comprising:  
4 advancing a medical instrument within the circulatory system toward the  
5 occluded segment;  
6 guiding the distal end portion of the medical instrument out of the  
7 circulatory system through an opening formed in the circulatory system on one  
8 side of the occluded segment to extend a first portion of the medical instrument  
9 outside of the circulatory system with a second portion of the medical instrument  
10 located within the circulatory system;  
11 advancing the end portion of the graft through the medical instrument with

12 the first portion of the medical instrument located outside the circulatory system  
13 and with the second portion of the medical instrument located within the  
14 circulatory system; and  
15 securing the end portion of the graft to a blood vessel of the circulatory  
16 system at a second side of the occluded segment.